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ABSTRACT

This report summarizes the major features of a 1973 summer conference (at the New York State University at Buffalo) on listening as an essential feature of communication and problems relating to students' listening skills. The conference was held because of an awareness that little attention is being paid to listening comprehension in the educational process, even though students spend much of their educational time in listening activities. Conference participants discussed current research on time-compressed speech, listening comprehension, current audio-tutorial programs, and the possibilities for future emphases on listening instruction. The authors have included copies of the papers they presented as well as an extensive bibliography entitled "Listening and Technology." (RN)

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A SUMMARY AND PAPERS FROM THE JULY-AUGUST CONVERSATIONS IN THE DISCIPLINES STATE UNIVERSITY COLLEGE AT BUFFALO

ON LISTENING AND AUDIO TUTORIAL SYSTEMS

FROM

HARUN ARRASJID and TAHER A. RAZIK

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CONVERSATION IN THE DISCIPLINE

Listening and Audio Tutorial System: An Analysis

"Listening - A Neglected Mode" was the title of the conversation's first presentation which covered the discrepancy between student's present performance and desired performance in the area of listening. This was given by Harun Arrasjid, the project coordinator. The objectives were:

1. To describe research findings in the area of listening comprehension
2. To analyze the role of listening as a communicative process
3. To describe research findings on the effect of listening training

Dr. Arrasjid also explained the purposes of the conversation.

1. To promote a familiarity of the participants with other campuses' efforts towards the improvement of learning through the use of Audio Tutorial system
2. To improve college students' achievement by promotion of audio tutorial system
3. To improve college students' listening skills
4. To bring together State University of New York faculty in academic conversation in the specific area - listening and audio tutorial systems
5. To analyze listening.

The specific objectives of the conversation were then presented.

1. To analyze the physical and psychological aspects of listening. To discuss listening skills and their effect on listening comprehension, specifically on recall of information, concepts, principles and inferences.
2. To analyze research findings in the area of listening comprehension. To discuss supporting studies in various disciplines.
3. To promote further research by conversation participants in listening comprehension and audio-tutorial approach.
4. To discuss the implementation of research findings concerning listening comprehension within the institutional system.
5. To analyze the improvement of listening comprehension, its efficiency and effectiveness and the raising of incentives and the capabilities of the instructional system.
6. To discuss the role of technology in the improvement of listening comprehension, and analyze the cybernatic principle of learning. To analyze the establishment of the audio tutorial system.
7. To discuss the current impact of the audio tutorial approach at the level and the development of a conceptual framework based on an analysis-synthesis sequence. To analyze the audio-tutorial system as a self-contained instructional package. To analyze the conceptual framework for planning, orderly consideration of functions and resources, including facilities. To analyze a way of checking on the relationship of all components' performance. To analyze various successful audio tutorial systems of various levels and complexity.
8. To evaluate existing audio-tutorial programs within the SUNY system based on reports by participants.

9. To discuss the implementation of compressed audio tape at the college level. To present audio tape compression techniques and equipment. To explore the system's view, the mediated audio tutorial system with compressed audio tape, and tactics used in the strategy of instruction. To analyze the effect of alternating audio stimuli.
10. To discuss "Listening and Technology" as a potential course at the college level, the course's relevance to and primary role in instruction.

Then the project director presented the reasons for holding the conversation:

1. The area of listening comprehension has been neglected by educational scholars.
2. College students spend most of their educational time listening.
3. Predictor measurements of college success based on listening comprehension needed to be analyzed.
4. Many studies have been done on reading but few have been done on listening.
5. There are hearing specialists but no listening specialists.
6. There is an increased trend towards independent study through use of audio tutorial systems.
7. There has been an increase in the availability and accessibility to various audio tutorial systems.
8. There has been increased accessibility to high speed cassette duplicating machines, and portable audio cassette playback machine and altered duplication machines.
9. The results of many studies regarding compressed speech have proven its value for instructional application.
10. Research has proved that the listening rate, like the reading rate, can be increased.

"Why the Pigeon Does Not Fit the Hole" was presented by August Root, of Syracuse University. The speaker demonstrated and explained the formula 7 ± 2 as a guide to the ability of the listener to recall through audio mode. As Root explained the human brain can only store and handle 7 ± 2 pieces of information. Root stated three basic principles for designing effective audio information.

1. The material should be preorganized. The audience should be told what is intended beginning with a simple organization of central concepts, and then move onto complex concepts that can be explained from the central concepts.
2. Stop regularly, especially if information is given through an audio tutorial system. The information should be designed based on several segments of information. 3. The "chunk" technique plays an important role in designing the presentation. Root stressed that the important emphasis should not be on training to listen, but on the design of the message. He also explained five scales of measuring the degree of listening skills which are to be identified from the levels of response to the speaker. These levels of responses towards the speaker include:

1. The listener's critisism of the speaker.
2. The introduction of irrelevant responses to the message by the listener.
3. The listener responds only to part of the message.
4. The listener understands the speaker, knows the message well so he responds accordingly.
5. The listener intergrates all the information he has been received including which has happened before his response.

In conclusion, Root emphasized that the reception, sorting, organizing and accepting or rejecting the information is the listening process.

Sarah H. Short, of the International Audio Tutorial Congress, explained the use of self-instructional methods at Syracuse University and the Upstate Medical Center in Syracuse, New York. Courses are taught by means of audio tapes intergrated with slides, 8mm films, CAI, and workbooks. Video tape is used for observing learners' attitudes and study activities during the learning process. A portion of Dr. Short presentation was a playback of an audio tape in which music was used for illustration and to stimulate listening.

The systematic approach as applied to the development of an Audio Tutorial System was described by Tahir Razik, of State University of New York at Buffalo, Buffalo, New York. He explained five system"s models under current consideration. All five models, he said, fall into three catagories. action that helps define the problem and organize a means to solve the problem, action that helps analyze and develop solutions to the problem, action that serves to evaluate the solutions. All of these are inter-related by feedback built into the models. He explained that the provision for feedback allows the instructional system to be refined and its effect enhanced.

A highlight of the conversation was when Emerson Foulke, of the Rate Controlled Recording Center, University of Louisville, Louisville, Kentucky, discussed "The Role of Time Compressed Speech in Aural Reading". As Foulke said, When a person listens to the recorded oral reading of another person, he is resorting to an alternative means of obtaining the information that might otherwise be obtained by reading the printed page, and he is therefore reading by listening. Some of the behaviors that enhance the performance of the visual reader are not ordinarily available to the aural reader. One of these is the ability to choose and vary word rate in accordance with the reader's objectives and the demands imposed on

him by the reading matter. The recent availability of relatively inexpensive equipment for the time compression of speech, and the imminent availability of even less expensive equipment, confronts the aural reader with the opportunity to wrest control of reading rate from the oral reader and manage it for himself. This opportunity confronts the researcher with interesting questions. How should the aural reading rate be managed? Should management strategies developed through research, be taught to the aural reader, or should the aural reader be allowed to forge a management strategy from his own experience?

Subgroup meetings were scheduled and each guest speaker participated in their discussion. The purpose of the subgroups' discussion was to respond regarding areas needing clarification or elaboration, areas of disagreement, and problems of practical application.

During the last phase of the conversation, two faculty members from the SUNY system campuses presented short papers. Brombach, of State University College at Postdam presented "Time Expansion on Music Analysis" and Richard D. Kelly of SUNY at Albany discussed the Audio Tutorial system used during the six week summer session in Biology at his campus.

The results of theconversation's ranked evaluation showed that 86 percent of the participants felt strongly that similar meetings should be held annually, 74 percent supported the offering of a course of Listening and Technology at the college level. Participants felt attendance at the conversation was worthwhile and they intended to implement what was discussed during the conversation. They indicated that the meeting fullfiled their expectations, met the objectives, and the speakers were appropriate.

The conversation was sponsored by the State University of New York, New York.

The meeting was attended by 11 SUNY campuses and other institutions and was held on August 4, 1973 at the State University College at Buffalo, New York. Dr. Gene H. Steffen, the director of Instructional Resources represented the college president welcomed the conversations' participants.

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LISTENING: A NEGLECTED MODE

Harun Arrasjid, Ed.D.

During the past decade and a half educators have become more interested in listening as a component of the communication-learning process. Listening is one of the most neglected areas of education. As reported in the Third Mental Measurements Yearbook in 1949, no references to a single test of listening ability were listed.

Pratt found there were no more than 175 titles on listening in 1952 and only about 50 articles of these can be classified as research. Even today there is no measurement of listening as a predictor of students' success, although there are reading specialists, there are no listening specialists.

A clear relationship exists between the performance of listening and the arts of reading and writing. As listening skills improve the listener's understanding increases and consequently, communication skills improve.

Our purpose in speaking is usually to influence, to persuade or to inform another person. As we listen to another speaker, we experience change within ourselves. We are motivated towards discussion and find ourselves learning.

Listening deserves attention at all learning levels. Continuous improvement in the art of listening unquestionably goes hand in hand with progress in speaking, because conversation depends on communication interaction. Good conversation is impossible without critical listening.

Understanding of instructions given through the aural mode requires critical listening. We must listen with discrimination because of the constant barrage of audio stimuli from our environment.

Opportunities for listening to listen occur whenever the spoken word is used. There are many situations arising constantly in the life of every individual which call for critical and discriminating listening and for the mental responsiveness that is real thinking.

Readiness for listening is as important as readiness for reading. At all age levels, physical conditions conducive to good listening need to be provided. Preparation for listening paves the way for thoughtful concentrated listening. In the primary grades a definite time is set aside almost daily for appreciative listening. The work of the intermediate grades calls for more of analytical listening. Guidance can develop more mature listeners. Listening plays an important role in learning and achievement.

LISTENING AND COMMUNICATION

Communication, involving as it does both transmission and reception, is by nature a two-way process. Broad definitions of speaking and writing encompass the transmittal phase of verbal communication. Reception of communication is commonly thought of as the work of the visual and aural senses. Of course, other senses such as touch and smell play a role, but the major portion of the reception

of verbal communication depends on reading and listening, if these terms are used in their broadest sense.

Language communication consists of four major components. Listening and reading, the input components, and speaking and writing, the output components. Only listening occurs almost all of the time. Our ears are always receiving sensations of sound. The listening skill seems to be the most important factor for success in school. We sometimes say children listen but they do not hear. The instructor can help the child use his listening skills more effectively by providing guidance and practice. For a child to listen well, he must be able to discriminate among sounds, get meaning from context, interpret, draw conclusions and predict.

Listening depends on hearing but must be distinguished from it, just as reading depends on, but encompasses more than seeing. Both listening and reading involve an intellectual or mental action. The term used for the result of this action is comprehension. Comprehension implies the attachment of meaning to the message seen or heard and comprehension involves interpretation and evaluation. When we listen we attend; we organize a maximum concentration or our sensory receptors upon the communicative stimulus consisting of audible and visible symbols. Only after we attend do we perceive. Then we respond after we both attend and perceive. One can listen to speech, to music, or to other sounds, and the essential act remains the same.

Listening plays an important role in the process of communication. Various studies have indicated that in terms of the amount of time the four communications skills are employed, listening is the most important skill. In a study of adults, Rankin found that 45% of the total time they devoted to communication was spent in listening, 30% in speaking, 16% in reading and 9% in writing. A similar study by Bird with female college students revealed that 42% of their time was spent by listening, 25% in speaking, 15% in reading and 18% in writing. A study carried out by Wilt on 530 elementary school children from grades 1 through 6 in 19 classrooms showed that children were expected to listen 57-½% of the time they spent in the classroom, the median daily time being 158 minutes. Wilkinson found that elementary school students spend more than one half of their school day listening, and high school students range as high as 90%.

But quite apart from evidence of this kind, which cannot be properly evaluated without some assessment of the relative importance of the content that is communicated, it is obvious that listening is a significant medium of learning at all stages of education as well as in post school life. And the need for effective listening in the higher grades of the elementary school and in high school and college, is likely to become more pronounced as instructional technological audio devices are used increasingly to supplement formal lessons and lectures. At the adult level, listening opportunities have been extended spectacularly in the present century with the development of such mass media as radio, television and film. One study found that adults received about 60% information through modern technological devices. We cannot argue Zeno's statement: "We have two ears and one mouth that we may listen more and talk the less."

CAN PEOPLE BE TRAINED TO LISTEN?

Various studies show that training in listening is possible. In separate studies, Bird, Brown, Erickson, Nichols and Lewis found that experimental groups

gain in listening comprehension after training in listening. That low listening ability subjects benefit from training more than subjects of high listening ability has been found by Bird, Ericson and also by Irvin. Results from the Penfield study in the area of learning to listen showed that training in listening was most effective at grades two and five, with very little impact at grades eight and eleven.

Taylor's studies showed gains in student listening efficiency even after brief exposure to listening exercise. Kervin found that systematic instruction in listening comprehension benefited all intermediate grade students. As reported by Wilkinson, various investigators have found in almost all cases that experimental groups of college freshman who have received systematic training have achieved higher scores on listening comprehension tests than students who do not have training.

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"A Systematic Approach"

Systamic development of instruction vary from simple models to very complex specifications of step-by step approaches to developing instructional materials. Regardless of the simplicity or complexity of a particular "Systems Approach" is, in listening and audio tutorial to developing instruction, all models have many similarities. This presentation will present five "systems approach" models and describe some of the similarities and differences between them. The models under considerations are:

1.	Teaching Research System	Hamreus	1968
2.	Michigan State University Instructional Systems Development Model	Barson	1967
3.	Systems Approach for Education	Corrigan	1966
4.	Instructional Systems Design	Tracey	1967
5.	Banathy Instructional Development System	Banathy	1968

Each of the above models include actions that fall into three major categories. 1.) Actions that help define the problem and organize a means to solve the problem, 2.) and actions that help analyze and develop solutions to the problem, 3.) and actions that serve to evaluate the solutions. All of these actions are inter-related by feedback built in the model. The provision of feedback allows the instructional system to be refined and its effect enhanced. Feedback is critical dynamic of instructional development approaches:

Feedback

Problem Definition and Organization	System Analysis Development	System Evaluation

Problem definition and Organization:
- a. Identification of problem
- b. Analysis of setting
- c. Organization of management

Systems Analysis and Development:
- a. Identification of Objectives
- b. Specification of methods
- c. Construction of prototypes

Systems Evaluation:
- a. Testing of prototype
- b. Analysis of results
- c. Implementation/recycling

Instructional Development System

Any instructional development system should include the following:

STAGE I: DEFINE

IDENTIFY PROBLEM	ANALYZE SETTING	ORGANIZE MANAGEMENT
Assess Needs	Audience	Tasks
Establish Priorities	Conditions	Responsibilities
State Problem	Relevant Resources	Time Lines

STAGE II: DEVELOP

IDENTIFY OBJECTIVES	SPECIFY METHODS	CONSTRUCT PROTOTYPES
Terminal	Learning	Instructional Materials
Enabling	Instruction Media	Evaluation Materials

STAGE III: EVALUATION

TEST PROTOTYPES	ANALYZE RESULTS	IMPLEMENTATION
Conduct Tryouts	Objectives	Review
Collect Evaluation Data	Methods	Decide
	Evaluation Techniques	Act

ADDENDA

Conversation in the Discipline
An Analysis of Listening and Audio-Tutorial System
State University College at Buffalo

Purposes and Goals

The goals will be: to promote a familiarity of the participants with other campuses' efforts towards the improvement of learning through listening, to improve college students' achievement by promotion of audio-tutorial systems and ~~to improve college students' achievement by promotion of audio-tutorial systems and~~ to improve college students' listening skills.

Generally, the conversation will bring SUNY faculty to a peak of academic conversation in the specific area--Listening and Audio-Tutorial System.. The area of listening which has been heretofore neglected will be analyzed.

Specific Objectives:

1. To analyze the physical and psychological aspects of listening. To discuss listening skills and their effect on listening comprehension, specifically on recall of information, concepts, principles and inferences.

2. To analyze research findings in the area of listening comprehension. To discuss supporting studies in various disciplines.

3. To promote further research by conversation participants in listening comprehension and audio-tutorial approach.

4. To discuss the implementation of research findings concerning listening comprehension within the institutional system.

5. To analyze the improvement of listening comprehension, its efficiency and effectiveness and the raising of incentives and the capabilities of the instructional system.

6. To discuss the role of technology in the improvement of listening comprehension, and analyze the cybernatic principle of learning. To analyze the establishment of the audio-tutorial system.

7. To discuss the current impact of the audio-tutorial approach at the level and the development of a conceptual framework based on an analysis-synthesis sequence. To analyze the audio-tutorial system as a self-contained instructional package. To analyze the conceptual framework for planning, orderly consideration of functions and resources, including facilities. To analyze a way of checking on the relationship of all components' performance. To analyze various successful audio-tutorial systems of various levels and complexity.

8. To evaluate existing audio-tutorial programs within the SUNY system based on reports by participants.

9. To discuss the implementation of compressed audio tape at the college level. To present audio tape compression techniques and equipment. To explore the system's view, the mediated audio-tutorial approach with compressed audio tape, and tactics used in the strategy of instruction. To analyze the effect of alternating audio stimuli.

10. To discuss "Listening and Technology" as a potential course at the college level, the course's relevance to and primary role in instruction.

CONVERSATIONS IN THE DISCIPLINE

An Analysis of Listening and Audio-Tutorial Systems

Directions

a) It is expected that the participants will respond regarding:

1. areas needing clarification
2. areas of disagreement
3. areas needing elaboration
4. problems of practical application

b) Interaction will occur during the subgroup meetings. Two participants should be assigned, one as a moderator, another as reporter to the large group meeting. Questions should be listed and asked of the guest speakers and the panel discussion.

CONVERSATIONS IN THE DISCIPLINE

An Analysis of Listening and Audio-Tutorial Systems

EVALUATION

1. The conversation fulfilled my expectations.
2. The objectives of the conversation were attained.
3. The guest speakers were appropriate.
4. The A-T system was well presented.
5. Compressed Speech was well presented.
6. Listening as a mode and the A-T approach as a means were well presented.
7. Listening was well discussed.
8. I prefer the conversation be an annual event.
9. In the future the conversation should be lengthened to two days.
10. Elementary and secondary school teachers should be included as participants in future conversations.
11. A college level course covering "Listening and Technology" should be offered.
12. I intend to implement what was discussed in the conversation.
13. Attendance at the conversation was worthwhile.

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LI ST NING AND T CHNOLOGY

Complied by

Dr. Harun Arrasjid

Instructional Resources

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July, 1973

Introduction

The purpose of this bibliography is to provide a compendium of references in the area of LISTENING and TECHNOLOGY.

Included in the bibliography are a broad range of references, a mixture of all levels and types of techniques.

Hopefully, the bibliography will answer many questions from educators and researchers in this area. For information on compressed speech, we suggest the:

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